DOCUMENT RESUME

ED 200 956 CS 006 055

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TITLE An Investigation of the Specific Aspects of the Prompting and Fading Procedure in Teaching Beginning Reading.
PUB DATE Mar 81
NOTE 12p.; Paper presented at the Annual Meeting of the Southeastern Psychological Association (Atlanta, GA, March 25-28, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Beginning Reading; *Error Analysis (Language); *Language Acquisition; Learning Theories; Primary Education; Reading Instruction; *Reading Research; *Word Recognition
IDENTIFIERS *Reading Strategies

ABSTRACT

A study investigated the effects of the prompting procedure and the fading procedure upon the acquisition of word recognition skills in beginning readers. The prompting procedure is designed to overdetermine correct reading responses during word acquisition, while the gradual fading of the prompts results in transfer of control from the prompt to the printed word. Thirty kindergarten children received four training trials covering 15 words commonly found in preprimers. The groups were a (1) prompting and fading group, which was shown pictorial prompts that were then gradually faded; (2) a prompting only group, which recieved the same pictorial prompts but no fading; and (3) a no prompting group, which was exposed to the printed words but no pictorial prompts. Results showed that the prompting and fading group and the prompting only group maintained a low error rate throughout training, while the no prompting group demonstrated a high initial error rate that gradually declined. The prompting and fading group and the no prompting group performed similarly and significantly higher than the prompting only group on a word recognition test administered after training. The findings suggest that increasing the level of prompting reduces the rate of acquisition of word recognition skills. (Author/FL)

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An Investigation of the Specific Aspects of the Prompting and Fading Procedure in Teaching Beginning Reading[1]

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[1]Paper presented at the Southeastern Psychological Association meeting. Atlanta, Georgia (1981)

CS206855

An Investigation of the Specific Aspects of the Prompting and Fading Procedure in Teaching Beginning Reading[1]

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The prompting and fading procedure, which involves gradual transfer of control from one stimulus dimension to another, has been demonstrated to be effective in discrimination learning tasks with pigeons (Terrace, 1963a, b), with normal children (Moore and Goldiamond, 1964), and with mentally retarded children (Sidman and Stoddard, 1969; Touchette, 1968). Prompting and fading has been shown to be effective also in teaching beginning reading to young children (Haber and Glasser, 1962; McDowell, 1968).

It has been reported that the major advantages of the prompting and fading technique for teaching beginning reading are (1) low error rates during acquisition and (2) effective learning as measured by tests of word recognition skills (McDowell, 1971). The prompting procedure is designed to over determine correct reading responses during acquisition, while the

[1]This study was supported by a Faculty Research Grant-in-Aid from Western Carolina University. The writer wishes to thank Earl Hooper, Superintendent of the Jackson County Schools, William Smith, Principal, and the teachers, parents, and students of Fairview School for their cooperation in the project. Also, the writer wishes to thank Ester R. Morrison for her assistance in data collection and Fitzallen Eldridge, W.C. Martin and the WCU Media Center staff for special assistance in materials preparation.

gradual fading of the prompts results in transfer of control from the prompt to the printed word.

Two studies have investigated specific aspects of the prompting and fading technique. McDowell, Nurn, and McCutcheon (1969) compared a prompting and fading technique with a no prompting procedure in teaching beginning reading to kindergarten children. The prompts included pictorial and contextual cues from the story, "Goldilocks and the Three Bears." The prompting and fading group demonstrated a lower error rate during acquisition; however, there were no significant differences between the groups on subsequent word recognition skills. Corey and Shamow (1972) compared a prompting and fading technique with a prompting only procedure in teaching beginning reading with pictorial prompts superimposed over printed words. The prompting and fading group was found to be superior to the prompting only group on both initial and cumulative word recognition tests.

No study has investigated the effects of the specific procedures of prompting and of fading on both error rate during acquisition and on subsequent word recognition skills. The present study was undertaken to investigate the effects of the prompting procedure and of the fading procedure upon acquisition and word recognition skills in beginning reading.

Method

Subjects

Thirty kindergarten children were randomly assigned to one of three groups with the provision that each group included the same number of males and females. There was a prompting and fading group, a prompting only group, and a no prompting group. There were nine males and twenty one females, ranging in age from 5 years - 5 months to 6 years - 5 months. All subjects attended the same public school kindergarten; none had previously received

formal reading instruction.

Apparatus

Stimuli included 15 words (nouns) which are typically found in pre-primers (tree, cow, boat, flower, truck, cup, bow, hat, sun, house, car, apple, bear, fish, barn). The words were printed with black image on white lettering tape using a 3M Lettering System (model no. 7402AG). The words were printed in 18 point type with Helvetica regular type face.

There were pictorial prompts for each word in the form of simple line drawings. The pictorial prompts were presented on 35 MM slides photographed on Kodalith ortho film, type 3. The pictorial prompts were presented through a slide viewer (Sears model 99261). The printed words were typed on the front of each slide below the picture to allow simultaneous viewing of the prompt and associated word.

The slide viewer was modified in a manner described by Corey and Dorry (1974) to allow illumination of the translucent picture from the internal lamp behind and illumination of the non-translucent word from the light in the room. The illumination of the words was accomplished by removing two sections of the housing of the viewer to let in light from the room. The illumination of the pictorial prompt was controlled by a rotary switch resistor circuit in series with the internal lamp of the slide viewer. An accessory 4-V AC transformer (Sears model 9918) power source was used to set resistor valves at 0 (clearly visible), 5.5, 6.5, 7.7, and 10.5 (completely dark) ohms in parallel with the internal lamp switch.

Procedure

All subjects were given a single 20 to 30 minute training session in which the 15 words were presented randomly four times followed by a final presentation of the words for testing purposes. During the training sessions,

each subject was asked to read the word being presented. Correct responses were acknowledge and praised by the experimenter; incorrect responses were corrected. There was a prompting and fading group, a prompting only group, and a no prompting group.

The prompting and fading group was presented with the words and pictures fully illuminated during the first training trial. During the second, presentation of the 15 words, the pictorial prompts were faded by setting the resistor dial for the internal lamp of the viewer at 5.5 ohms. During the third and fourth training trials the resistor dial was set at 6.5 and 7.7 ohms respectively. The fifth trial served as a test during which the pictures were darkened entirely by setting the resistor dial at 10.5 ohms. The words remained completely visible from the light in the room throughout all training and test trials. Also, the order of presentation of the words was randomized for each of the four training trials and the test trial.

The prompting only group was presented with the same printed words and pictorial prompts throughout the four training trials. The resistor dial was set at 0 during all four training trials, thus leaving the pictures and words fully visible. There was also a no prompting group which received four training trials with the 15 words with the resistor dial set at 10.5 ohms, thus allowing no pictorial prompting. Trial 5 for both of the above groups constituted a testing session during which the 15 words were presented randomly with no pictorial prompts.

Results

The mean number of word recognition errors for each group through four training trials is presented in Figure 1. It can be seen in Figure 1 that both the prompting and fading group and the prompting only group consistently maintained low error rates throughout training (2% and 1% respectively).

In contrast, the no prompting group demonstrated a high error rate initially which decreased on subsequent trials (51% over all trials). It should be noted, however, that even on the fourth training trial, the number of errors for the no prompting group was considerably higher than for the other two groups.

Insert Figure 1 about here

The mean number of words read correctly by each group on the word recognition test is presented in bar graph form in Figure 2. It can be seen in Figure 2 that the prompting and fading group correctly recognized a mean of 10.90 words, the no prompting group correctly read a mean of 11.40 words, and the prompting only group correctly read a mean of 6.70 words.

Insert Figure 2 about here

A simple analysis of variance as described in Runyon and Haber (1980) was conducted on the mean scores for the word recognition test. The differences among mean scores were found to be significant ($F = 12.12$, df 2/27, $p < .01$). A post hoc comparison of the individual means was conducted using the Tukey HSD test as described in Runyon and Haber (1980). The results indicate that both the prompting and fading and the no prompting groups performed significantly higher on the word recognition test than the prompting only group. The difference between the prompting and fading group and the no prompting group was, however, not significant.

Discussion

The findings of the present study are consistent with those of other studies which show that the prompting and fading procedure produces low error rates during training and results in acquisition of word recognition skills. The predicted advantages of the "errorless" technique (prompting

and fading) over the more conventional trial and error procedure with correction (no prompting) were, however, not demonstrated. It would appear that the acquisition of word recognition skills is as effective when subjects are allowed to make errors which are corrected by the experimenter as when prompts are utilized to over determine a correct response.

As expected, the group which received prompting only performed more poorly than either of the other two groups on the word recognition test. It is evident that the continued presence of the pictorial prompts impeded transfer of stimulus control to the printed words. It should be noted, however, that some word recognition skills did develop in spite of the continued presence of the pictorial prompts.

A comparison of the performance of the prompting only group with that of the no prompting group suggests that increasing the level of prompting reduces the rate of acquisition of word recognition skills. It would be useful to conduct another study in which different groups receive different levels of prompting. The findings of the present study suggest that the groups receiving weaker prompts would make more errors during training but would perform better on a post test of word recognition skills.

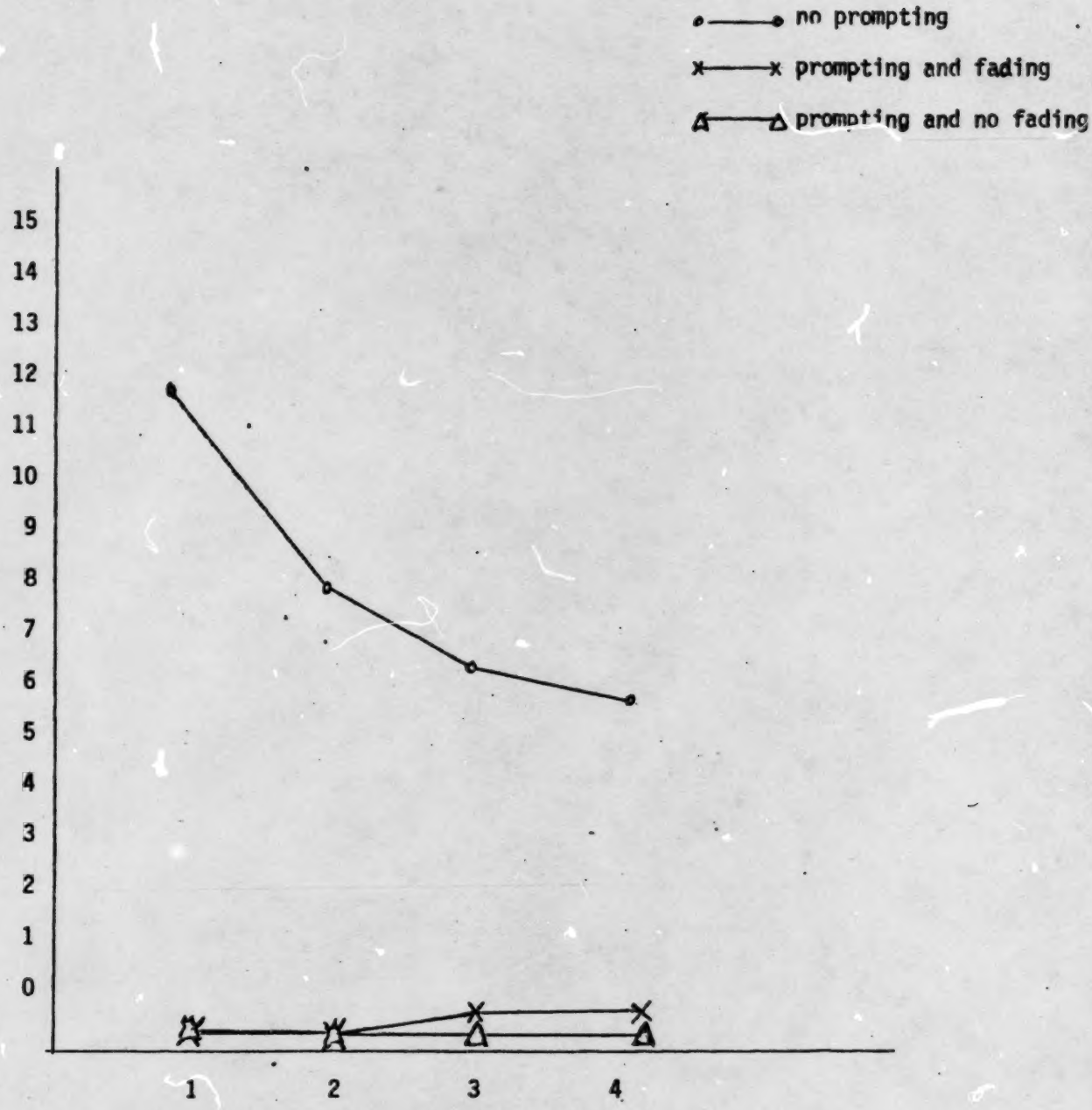

Fig. 1. Mean number of word recognition errors for three training groups over four trials.

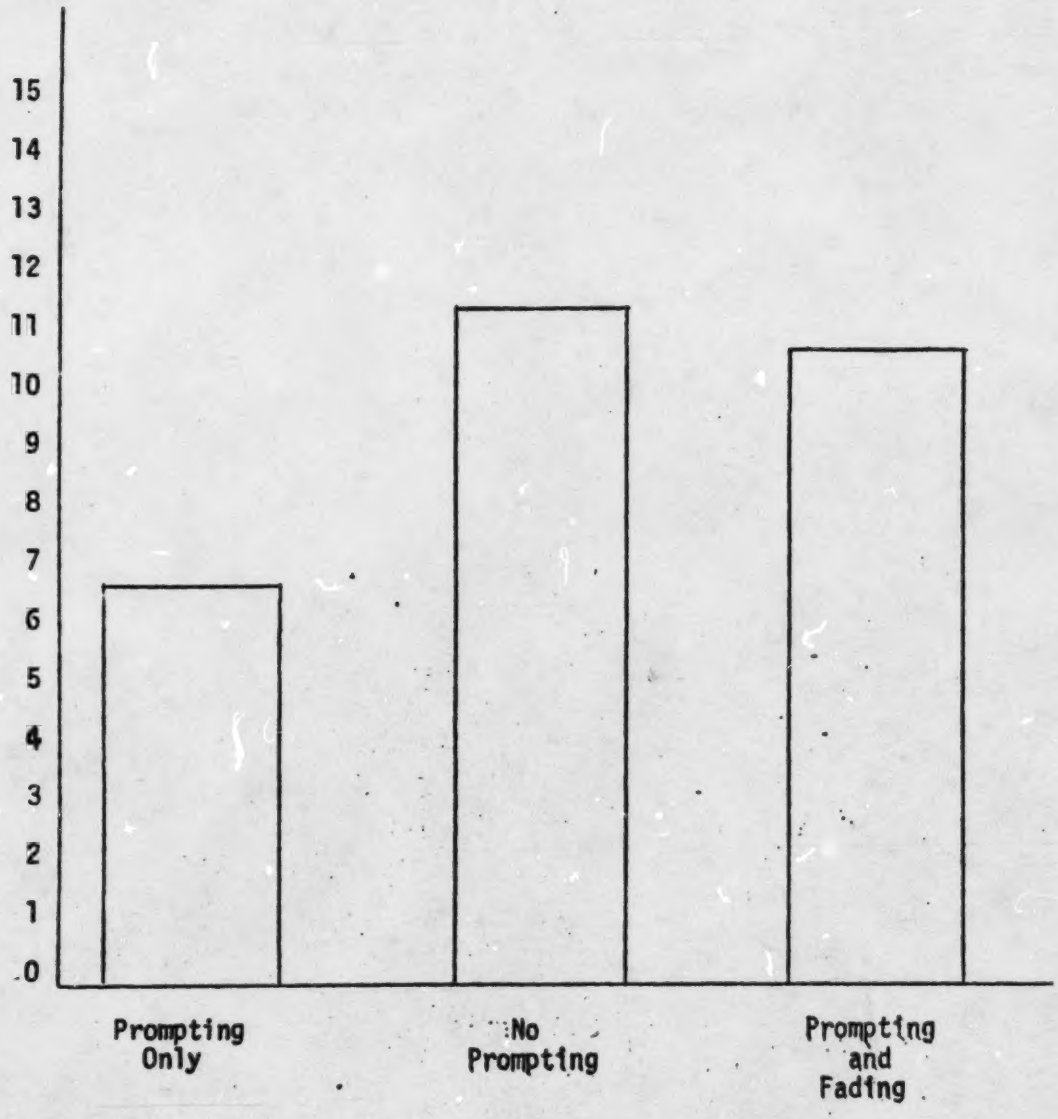

Fig. 2. Mean scores on word recognition test for three training groups.

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